PTO/SB/08a (04-07) Approved for use through 09/30/2007. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

101995.013901

Under the Paperwork Reduction Act of 1 persons are required to respond to a collection of information unless it contains a valid OMB control number. Substitute for form 1449A/PTO Complete if Known Application Number 10/624,993 **Filing Date** July 22, 2003 **INFORMATION DISCLOSURE** STATEMENT BY APPLICANT First Named Inventor Svetlana A. SUKHISHIVILI, ET AL. Art Unit 1615 (Use as many sheets as necessary) **Examiner Name** Caralynne HELM

Attorney Docket Number

4

of

SEP 2 2 2008

1

			U. S. PATENT	DOCUMENTS	
Examiner Initials	Cite No.1	Document Number Number-Kind Code: ((1 + 1 + 1 + 1))	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	US 6,511,749	01-28-2003	Mathiowitz et al	
	2	US 2004/0013721 A1	01-22-2004	Antipov et al.	
	3	US 2005/0163714 A1	07-28-2005	Sukhishvili et al.	
	4				
	5				
	6				
	7				
	8				
	9				
	10				
	11				
	12				
	13				
	14				
	15				<u> </u>
	16				
	17				· · · · · · · · · · · · · · · · · · ·
	18				
_	19		-		
	20		-		

		FOF	REIGN PATENT D	OCUMENTS		
Examiner Initials	Cite No.1	Foreign Patent Document Country Code ³ , 'Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	т.
		WO-03/035278-A1	5/1/2003	Massachusetts Institute of Technology		
		WO-99/47252	9/23/1999	Max-Plánck-Gesellschaft		
		WO-02/17888	3/7/2002	Max-Plánck-Gesellschaft		

Date Considered Examiner Signature

EXAMINER: initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant: 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Document at www.uspto.gog/ or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.16) if possible. 8 Applicant is to place a chock mark here if English language Translation is attached.

This collection of Information is required by 37 CFR 1.97 and 1.98. The Information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Petert and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Sheet

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

	te for form 1449/PTO			Complete if Known		
				Application Number	10/624.993	
			CLOSURE	Filing Date	July 22, 2003	
STA	TEMENT E	BY AI	PPLICANT	First Named Inventor	Svetlana A. SUKHISHIVILI, et al.	
	(Use as many she	ets as ne	ecessarv)	Art Unit	1615	
				Examiner Name	Caralynne HELM	
Sheet	2	of	4	Attorney Docket Number	101995.013901	

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T 2
	1	J. Kost, R. Langer, Responsive Polymeric Delivery Systems, 46 ADVANCED DRUG DELIVERY REVIEWS 125-148 (2001)	
	2	G.B. Sukhorukov et al., pH Controlled Macromolecule Encapsulation in and Release from Polyelectrolyte Multilayer Nanocapsules, 22 MACROMOL. RAPID COMMUN. 44 (2001)	
	3	G. Decher and J.D. Hong, Buildup of Ultrathin Multilayer Films by a Self-Assembly Process: I. Consecutive Adsorption of Anionic and Cationic Bipolar, 46 MACROMOL. SYMP. 321 (1991).	
	4	P. Fisher, et al., Polyelectrolytes Bearing Azobenzenes for the Functionalization of Multilayers, 137 MACROMOL. SYMP. 1 (1999)	
	5	G.B. Sukhorukov et al., Stepwise Polyelectrolyte Assembly on Particle Surfaces: a Novel Approach to Colloid Design, 9 POLYM. ADV. TECHNOL. 759 (1998)	
	6	A.A. Antipov, et al., Sustained Release Properties of Polyelectrolyte Multilayer Capsule, 105 J. PHYS. CHEM. B 2281 (2001)	
	7	X. Qiu et al., Permeability of Ibuprofen in Various Polyelectrolyte Multilayers, 286 MATER. ENG. 591 (2001)	
	8	F. Caruso et al., Microencapsulation of Uncharged Low Molecular Weight Organic Materials by Polyelectrolyte Multilayer Self-Assembly, 16 LANGMUIR 8932 (2000)	
	9	F. Caruso et al., Enzyme Encapsulation in Layer-by-Layer Engineered Polymer Multilayer capsules, 16 LANGMUIR 1485 (2000)	

Examiner	Date	
Signature	Considered	

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with M PEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box i450, Alexandria, VA 22313-1450.

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

	e for form 1449/PTO		t or 1995, no persons are	Complete if Known		
				Application Number	10/624.993	
		_	CLOSURE	Filing Date	July 22, 2003	
STA	STATEMENT BY APPLICANT			First Named Inventor	Svetlana A. SUKHISHIVILI, et al.	
	(Use as many sheets as necessary)			Art Unit	1615	
				Examiner Name	Caralynne HELM	
Sheet	3	of	4	Attorney Docket Number	101995.013901	

		 $\overline{}$
NON PATENT LITERATUR	RE DOCHMENTS	,
11011 I ATENT ELLEKATOR	ICE DOCCUMENTS	

Examiner Initials*	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book magazine journal serial symposium catalog etc.) date page(s) volume-issue
	I NO. I	the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	10	F. Albert Cotton and Geoffrey Wilkinson, ADVANCED INORGANIC CHEMISTRY 90-94 (5th Ed., 1988)
	11	G.B. Sukhorukov et al., Layer-by-Layer Self Assembly of Polyelectrolytes on Colloidal Particles, 137 COLLOIDS SURF. A: Physiochem. Eng. Aspects 253 (1998)
	12	F. Caruso et al., Electrostatic Self-Assembly of Silica Nanoparticle-Polyelectrolyte Multilayers on Polystyrene Latex Particles, 120 J. AM. CHEM. SOC. 8523 (1998)
	13	J.B. Schlenoff et al., Sprayed Polyelectrolyte Multilayers, 16, LANGMUIR 9968 (2000)
	14	G.B. Sukhorukov et al., Microencapsulation by Means of Step-Wise Adsorption of Polyelectrolytes, 17 J. MICROENCAPSULATION 177 (2000)
	15	V. Kozlovskaya et al., Hydrogen-Bonded Polymer Capsules Formed by Layer-by-Layer Self-Assembly, 36 MACROMOLECULES 8590-8592 (2003)
	16	Shi et al., Release Behavior of Thin-Walled Microcapsules Composed of Polyelectrolyte Multilayers LANGMUIR 2036 (2001)
	17	A.A. Antipov et al., Carbonate Microparticles for Hollow Polyelectrolyte Capsules Fabrication, 224 COLLOIDS SURF. A: Physiochem. Eng. Aspects 175 (2003)
	18	M. Adamczyk et al., Immunoassay Reagents for Thyroid Testing 1. Synthesis of Thyroxine Conjugates, 5 BIOCONJUGATE CHEM. 459 (1994)
Examiner		Date
Signature		Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M PEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box i450, Alexandria, VA 22313-1450.

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERC

Substitut	e for form 1449/PTO			Complete if Known		
		٠		Application Number	10/624.993	
			CLOSURE	Filing Date	July 22, 2003	
STA	TEMENT E	BY AI	PPLICANT	First Named Inventor	Svetlana A. SUKHISHIVILI, et al.	
	(Use as many she	ets as ne	ecessary)	Art Unit	1615	
	(555 55 11611)	-	,,,	Examiner Name	Caralynne HELM	
Sheet	4	of	4	Attorney Docket Number	101995.013901	

NON PATENT LITERATURE DOCUMENTS	

Examiner Initials*	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T 2
	19	T. Serizawa et al., Thermoresponsive Ultrathin Hydrogels Prepared by Sequential Chemical Reactions, 35 MACROMOLECULES 2184 (2002)	
	20	Antipov et al., Polyelectrolyte Multilayer Capsule Permeability Control, 198-200 COLLOIDS AND SURFACES A: PHYSIOCHEM. ENG. ASPECTS (2002) 535	
	21	Shchukin et al., Micron-Scale Hollow Polyelectrolyte Capsules with Nanosized Magnetic Fe3O4 Inside, 57 MATERIALS LETTERS 1743 (2003)	The PTO did not receive the following
	22	A. Janekovic et al., Preparation of Monodispersed Colloidal Cadmium Compounds, 103 J. COLLOID INTERFACE SCI. 436 (1985)	ve the f
	23	A. Antipov et al., Urease-Catalyzed Carbonate Precipitation Inside the Restricted Volume of Polyelectrolyte Capsules, 24 MACROMOL. RAPID COMMUN. 274 (2003)	ot recei
	24	K. Park, Controlled Drug Delivery: Challenges and Strategies, (Am. Chem. Soc., Washington, D.C., 1997)	O did
	25	R.F. Egerton, Electron Energy-Loss Spectroscopy in the Electron Microscope (2 nd Ed., 1996)	The P
	26	International Preliminary Report on Patentability (with International Search Report) issued on April 13, 2006, in connection with International Patent No. PCT/US 2004/032491	
	27	Office Action dated August 26, 2008, received in connection with U.S. Patent Application No. 10/965,922	

Examiner	Date	
Signature	Considered	

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with M PEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box i450, Alexandria, VA 22313-1450.